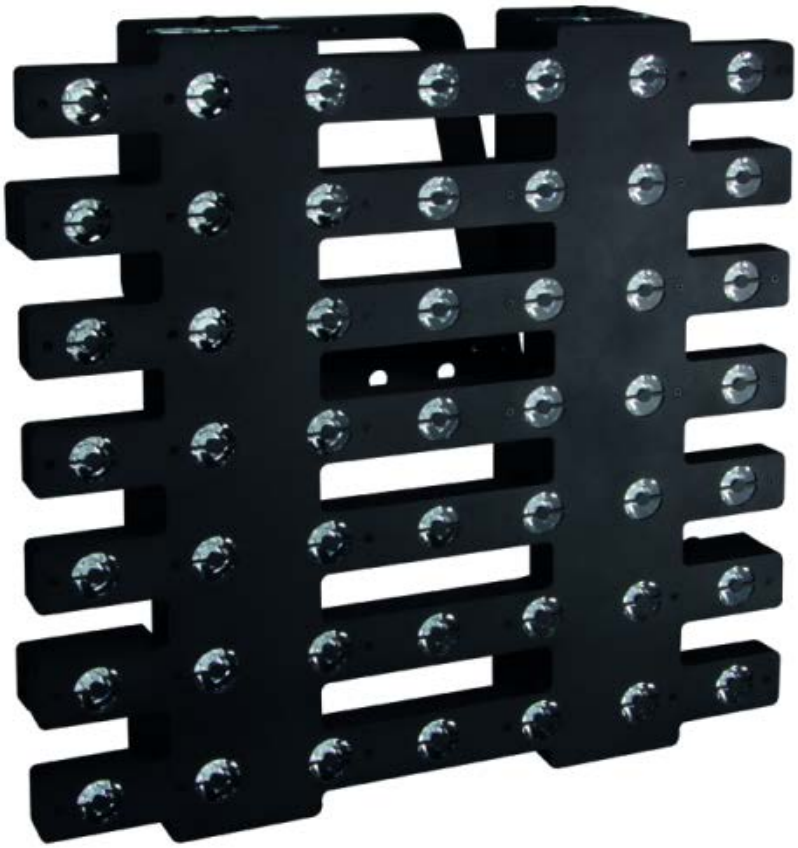
# LX120

## LUXIPIX 7X7 LED MATRIX



## USER MANUAL

# 1. Introduction

**To all residents of the European Union**

**Important environmental information about this product**

This symbol on the device or the package indicates that disposal of the device after its lifecycle could harm the environment. Do not dispose of the unit (or batteries) as unsorted municipal waste; it should be taken to a specialized company for recycling. This device should be returned to your distributor or to a local recycling service. Respect the local environmental rules.

**If in doubt, contact your local waste disposal authorities.**

Thank you for choosing Luxibel®! Please read the manual thoroughly before bringing this device into service. If the device was damaged in transit, don't install or use it and contact your dealer.

# 2. Safety Instructions

| | |
|---|---|
| | Be very careful during the installation: touching live wires can cause life-threatening electroshocks. |
| | Always disconnect mains power when device not in use or when servicing or maintenance activities are performed. Handle the power cord by the plug only. |
| | **Indoor use only.** Keep this device away from rain, moisture, splashing and dripping liquids. Never put objects filled with liquids on top of or close to the device. |
| | Keep this device away from children and unauthorized users. |
| | **Caution:** device heats up during use. |
| | **Do not stare directly at the light source**, as this may cause<br>• epileptic seizure in sensitive people<br>• temporarily loss of sight (flash blindness)<br>• permanent (irreversible) eye damage. |
| | There are no user-serviceable parts inside the device. Refer to an authorized dealer for service and/or spare parts. |

- This device falls under protection class I. It is therefore essential that the device be earthed. Have a qualified person carry out the electric connection.
- Make sure that the available voltage does not exceed the voltage stated in the specifications of this manual.
- Do not crimp the power cord and protect it against damage. Have an authorised dealer replace it if necessary.
- Use an appropriate safety cable to fix the device (e.g. VDLSC7N or VDLSC8N).
- Install the device at a minimal distance of 0.5 m from flammable and explosive objects or substances.
- Respect a minimum distance of 0.5 m between the device's light output and any illuminated surface.
- The maximum ambient temperature is 45 °C. Do not operate the device at higher temperatures.

# 3. General Guidelines

Refer to the **Velleman® Service and Quality Warranty** on the last pages of this manual.

| | |
|---|---|
| | Keep this device away from dust and extreme temperatures. Make sure the ventilation openings are clear at all times. For sufficient air circulation, leave at least 20" (at least 50 cm) in front of the openings. |
| | Protect this device from shocks and abuse. Avoid brute force when operating the device. |

- Familiarise yourself with the functions of the device before actually using it. Do not allow operation by unqualified people. Any damage that may occur will most probably be due to unprofessional use of the device.
- All modifications of the device are forbidden for safety reasons. Damage caused by user modifications to the device is not covered by the warranty.
- Only use the device for its intended purpose. All other uses may lead to short circuits, burns, electroshocks, lamp explosion, crash, etc. Using the device in an unauthorised way will void the warranty.
- Damage caused by disregard of certain guidelines in this manual is not covered by the warranty and the dealer will not accept responsibility for any ensuing defects or problems.
- Mechanical wear and LEDs are not covered by warranty.
- A qualified technician should install and service this device.
- Do not switch the device on immediately after it has been exposed to changes in temperature. Protect the device against damage by leaving it switched off until it has reached room temperature.
- This device is designed for professional use on stage, in discos, theatres, etc.
- Use the appropriate power supply (see Technical Specifications below).
- Lighting effects are not designed for permanent operation: regular operation breaks will prolong their lives.
- Use the original packaging if the device is to be transported.
- Keep this manual for future reference.

## 4. Features

- strong die-cast housing
- Kling-Net/Art-Net support allows auto-configuration over Ethernet
- with bracket for rigging; connection hardware available
- auto mode via built-in programs with speed adjustment
- master/slave mode for synchronized operation of multiple units linked in a chain
- flicker-free operation (400 Hz)
- DMX controlled via 5, 49, or 54 channels◦5 channel mode: dimmer, strobe, auto mode, auto mode speed, dimmer curve
  - 49 channel mode: dimmer control for each pixel
  - 54 channel mode: dimmer control for each pixel + master dimmer, dimmer curve, shutter, auto mode, and auto mode speed
- clear LCD display for easy operation
- power supply via powerCON, linkable
- optional bracket: LX121

## 5. Overview

## 6. Protocols

**Kling-Net**

- ArKaos has designed the Kling-Net protocol to allow the distribution of real-time video data to remote display devices, such as LEDs or LED panels, over Ethernet.
- Kling-Net allows auto configuration of display devices using an etherCON® RJ 45 Ethernet connection.
- The device works best with the Arkaos Mediamaster™ Pro software and its Video Mapper extension (Mac and Windows).

- Refer to the ArKaos MediaMaster software manual for detailed instructions on programming this product (www.arkaospro.com).

**Art-Net**

- Art-Net is a communication system that allows DMX512 to be sent over Ethernet.
- The Art-Net protocol was developed by the company Artistic Licence Engineering and has now been published into the public domain.
- The protocol description is available on the following link: www.artisticlicence.com/WebSiteMaster/User%20Guides/art-net.pdf
- Various commercial and open source programs support the Art-Net protocol.

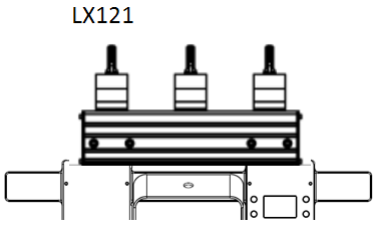
## 7. Mounting

Refer to the illustration in the section Overview above.

**Mounting the device**

- The device can be mounted in almost any orientation.
- Mount the device in the desired angle using the included bracket.
- Have the device installed by a qualified person, respecting EN 60598-2-17 and all other applicable norms.
- The carrying construction must be able to support 10 times the weight of the device for 1 hour without deforming.
- The installation must always be secured with a secondary attachment e.g. a safety cable.
- Never stand directly below the device when it is being mounted, removed or serviced. Have a qualified technician check the device once a year and once before you bring it into service.
- Install the device in a location with few passers-by that is inaccessible to unauthorised persons.
- Overhead mounting requires extensive experience: calculating workload limits, determining the installation material to be used... Have the material and the device itself checked regularly. Do not attempt to install the device yourself if you lack these qualifications as improper installation may result in injuries.
- For truss mounting, use an appropriate clamp (not incl.) and fit an M10 bolt through the centre of the (folded) bracket.
- Adjust the desired inclination angle via the mounting bracket and tighten the bracket screws.
- Make sure there is no flammable material within a 0.5 m radius of the device.

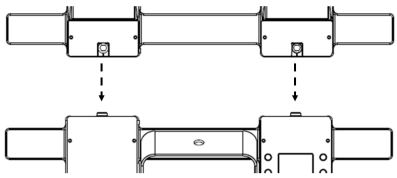
**Vertical mounting with optional LX121 bracket**




You can hang up to 16 panels vertically using the optional bracket (order code LX121).

Attach the other panels with the locks at the top and bottom of each panel.

**Vertical mounting without LX121 bracket**



If you do not use the LX121 bracket, you can attach up to 4 panels vertically in a single column using the appropriate clamps.

Position the bracket [1] upwards and attach it using the appropriate clamps.

**Horizontal alignment**

The device has brackets for horizontal alignment.

These brackets are for alignment purposes only and cannot be used to support the device.

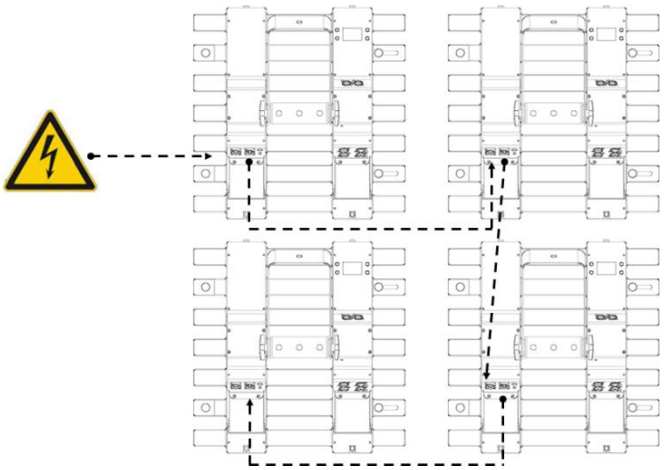
Additional hardware is required for horizontal mounting.

# 8. Connections

## 8.1 Power connections

- Have a qualified electrician carry out the electric connection.
- Connect the device to the mains with the power plug. All devices must be powered directly off a grounded switched circuit.
- Never connect the device to a rheostat or dimmer, even if the rheostat or dimmer channel is used solely for 0 % to 100 % switching.
- The device has a power output to supply power to another device. When connecting several devices in a daisy chain via this output, make sure that the total current does not exceed the power line's nominal current. Use power cables with an adequate section. If you do not use the power linking feature, be sure to use the included screw-on cap to prevent any water from getting into the power cords.
- The installation has to be approved by an expert before the device is taken into service.
- Disconnect after use.

**Power Linking**



You can link up to 13 devices at 230 V (7 devices at 120 V). Never exceed this number. Power linking cords can be purchased separately.

**Data linking**

The device works connected through a network switch (or crossover cable) to a controller or computer (Windows®, Apple Macintosh® or Linux®) with Kling-Net/Art-Net compatible software installed.

**Data Connection**

With Kling-Net/Art-Net, the device uses an RJ45 data connection to link all data ports.

## 8.2 DMX linking

The device works with any DMX controller with a DMX serial connection.

**DMX-512 Connection**

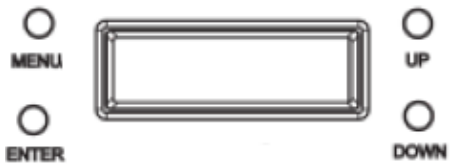
- When applicable, connect an XLR cable to the female XLR output of a controller (not incl.) and the other side to the male XLR input of the device. Multiple devices can be linked through serial linking. The linking cable should be a dual core, screened cable with XLR input and output connectors.
- Maximum recommended serial data link distance is 500 meters (1640 ft). Maximum recommended number of devices on a serial data link is 32 devices.
- A DMX terminator is recommended for installations where the DMX cable has to run a long distance or is in an electrically noisy environment (e.g. discos). The terminator prevents corruption of the digital control signal by electrical noise. The DMX terminator is simply an XLR plug with a 120 Ω resistor between pins 2 and 3, which is then plugged into the XLR output socket of the last device in the chain.

# 9. Operation

The device can be used in the following modes:

- stand-alone mode
- master/slave
- with a DMX512 controller

## 9.1 Using the Control Panel




Access the control panel functions using the four panel buttons located near the display.

| Button | Function |
|---|---|
| <MENU> | used to access the menu or to return to a previous menu option |
| <UP> | scrolls through the menu options in ascending order |
| <DOWN> | scrolls through the menu options in descending order |
| <ENTER> | used to select and store the current menu or option within the menu |

- The control panel display shows the menu items you select from the menu map. When a menu function is selected, the display will show immediately the first available option for the selected menu function. To select a menu item, press <ENTER>.
- Use the <UP> and <DOWN> buttons to navigate the menu map and menu options. Press <ENTER> to access the menu function currently displayed or to enable a menu option. To return to the previous option or menu without changing the value, press the <MENU> button.

## 9.2 Menu options

| Menu level 1 | Menu level 2 | Menu level 3 | Function |
|---|---|---|---|
| Auto Show | Auto 0 to 8 | Speed 0 to 100 | 9 built-in programs. |
| | | Speed 0 to 100 | |
| Static | Dimmer | 0-255 | Sets the dimmer strength |
| | Strobe | 0-255 | Sets the strobe frequency |
| Dimmer Mode | Off | | Sets the dimming mode |
| | Dimmer 1 | | |
| | Dimmer 2 | | |
| | Dimmer 3 | | |
| Back Lite | On | | Sets the time the panel remains on (always on to 30 seconds) |
| | 10S | | |
| | 20S | | |
| | 30S | | |
| Information | Auto Test | | Sets the device in test mode<br>Press Enter again to exit test mode |
| | Fixture Hours | | Shows number of working hours |
| | Version | | Shows software version |
| | IP Address | | Shows device's IP address |
| | Device ID | | Shows device's ID number |
| DMX Address | 1-508 | | Sets DMX address or Kling-Net/Art-Net start channel |
| DMX Channel | 5Ch | | Sets 5 channel mode (1-508) |
| | 49Ch | | Sets 49 channel mode (1-464) |
| | 54Ch | | Sets 54 channel mode (1-459) |
| Master/Slave | Master | | Sets Master mode |
| | Slave | | Sets Slave mode |
| Temperature | | | Shows the device temperature |
| Ethernet Setting | Protocol | | Sets protocol to Art-Net or Kling-Net |

| | | | |
|---|---|---|---|
| | IP Mode<br>[Only used with Art-Net] | Static | Uses the device's preset IP address |
| | | DHCP | IP address provided by router |
| | | Manual | Sets IP address manually |
| | Net | 0-127 | Only used with Art-Net |
| | Subnet | 0-15 | Only used with Art-Net |
| | Universe | 0-15 | Only used with Art-Net |
| | Start Channel | 1-512 | Only used with Art-Net |
| Minimum Dimmer | 0-100 | | Sets the minimum dimmer value |

## 9.3 Automatic mode

In automatic mode, the device runs built-in programs.

To set the device to automatic mode:

**1.** Connect nothing to the DMX input of the device.

**2.** Press <MENU> until <Auto Show> is displayed and press <ENTER>.

**3.** Use <UP> and <DOWN> to select one of the built-in programs.

**4.** Press <ENTER> to confirm.

## 9.4 Master/Slave Mode

The master/slave mode allows connecting several devices to a single master device. All slave devices will then work synchronously with the master device.

You need to set one device to master mode and all other devices to slave mode.

**1.** Connect all devices in series with DMX cables.

**2.** The first unit in the chain functions as the master device. Set up the unit as described in the section Automatic Mode above.

**3.** On the master device, press <MENU> until <Master/Slave> is displayed and press <ENTER>.

**4.** Use <UP> and <DOWN> to select <Master> and press <ENTER>.

**5.** On each slave device, press <MENU> until < Master/Slave > is displayed and press <ENTER>.

**6.** Use <UP> and <DOWN> to select <Slave> and press <ENTER>.

## 9.5 DMX Mode

This mode allows you to control the device by any universal DMX controller.

- All DMX-controlled devices need a digital start address so that the correct device responds to the signals. This digital start address is the channel number from which the device starts to “listen” to the DMX controller. The same starting address can be used for a whole group of devices or an individual address can be set for every device.
- When all devices have the same address, all the units will “listen” to the control signal on one particular channel. In other words: changing the settings of one channel will affect all devices simultaneously. If you set individual addresses, each device will “listen” to a separate channel number. Changing the settings of one channel will only affect the device in question.

To set the device to work with a DMX controller:

**1.** Press <MENU> until < DMX Channel> is displayed and press <ENTER>.

**2.** Use <UP> and <DOWN> to select a channel DMX mode and press <ENTER>.

**3.** Press <MENU> until < DMX Address> is displayed and press <ENTER>.

**4.** Use <UP> and <DOWN> to set the DMX starting address (1–508) and press <ENTER>.

## 9.6 DMW Addressing

**Example**

To use the 1-channel mode, set the start address of the first unit to 1 (CH1), the second to 2 (CH2), the third to 3 (CH3), and so on. The highest start address is 512.

Use the table below to define the correct address. The table shows the settings for units 1 to 3. Apply the same principle for the other units.

| Channel mode | | Start addresses | | | Highest start address |
|---|---|---|---|---|---|
| | | First unit | Second unit | Third unit | |
| 5 | Start address | 1 | 6 (1 + 5) | 11 (6 + 5) | 508 |
| | Channel | 1 - 5 | 6 - 10 | 11 - 15 | |
| 49 | Start address | 1 | 50 (1 + 49) | 99 (50 + 49) | 464 |
| | Channel | 1 - 49 | 50 - 98 | 99 - 147 | |
| 54 | Start address | 1 | 55 (1 + 54) | 109 (55 + 54) | 459 |
| | Channel | 1 - 54 | 55 - 108 | 109 - 162 | |

## 10. DMX Channel Values

**5 channel mode**

| channel | function | value | percent/setting |
|---|---|---|---|
| 1 | Dimmer | 000-255 | 0~100% |
| 2 | Strobe | 000-010 | No Function |
| | | 011-255 | Strobe Slow to Fast |
| 3 | Auto Programs | 000-010 | No Function |
| | | 011-038 | Auto1 |
| | | 039-066 | Auto2 |
| | | 067-094 | Auto3 |
| | | 095-122 | Auto4 |
| | | 123-150 | Auto5 |
| | | 151-178 | Auto6 |
| | | 179-206 | Auto7 |
| | | 207-234 | Auto8 |
| | | 235-255 | Auto0 |
| 4 | Auto Speed | 000-255 | Speed Slow to Fast<br>Only when Auto 0-8 is set on channel 3 |
| 5 | Dim Mode | 000-051 | Menu setting dimmer mode |
| | | 052-101 | dimmer mode off |
| | | 102-152 | dimmer mode 1 (fastest) |
| | | 153-203 | dimmer mode 2 |
| | | 204-255 | dimmer mode 3 (slowest) |

**49 channel mode**

| channel | function | value | percent/setting |
|---|---|---|---|
| 1 | White1 | 000-255 | 0 - 100% |
| 2 | White2 | 000-255 | 0 - 100% |
| 3 | White3 | 000-255 | 0 - 100% |
| 4 | White4 | 000-255 | 0 - 100% |
| 5 | White5 | 000-255 | 0 - 100% |
| 6 | White6 | 000-255 | 0 - 100% |
| (etc) | | | |
| 45 | White45 | 000-255 | 0 - 100% |
| 46 | White46 | 000-255 | 0 - 100% |
| 47 | White47 | 000-255 | 0 - 100% |
| 48 | White48 | 000-255 | 0 - 100% |
| 49 | White49 | 000-255 | 0 - 100% |

**54 channel mode**

| channel | function | value | percent/setting |
|---|---|---|---|
| 1 | White1 | 000-255 | 0 - 100% |
| 2 | White2 | 000-255 | 0 - 100% |
| 3 | White3 | 000-255 | 0 - 100% |
| 4 | White4 | 000-255 | 0 - 100% |
| 5 | White5 | 000-255 | 0 - 100% |
| 6 | White6 | 000-255 | 0 - 100% |
| (etc) | | | |
| 45 | White45 | 000-255 | 0 - 100% |
| 46 | White46 | 000-255 | 0 - 100% |
| 47 | White47 | 000-255 | 0 - 100% |
| 48 | White48 | 000-255 | 0 - 100% |
| 49 | White49 | 000-255 | 0 - 100% |
| 50 | Auto Programs | 000-010 | No Function |
| | | 011-038 | Auto1 |
| | | 039-066 | Auto2 |
| | | 067-094 | Auto3 |
| | | 095-122 | Auto4 |
| | | 123-150 | Auto5 |
| | | 151-178 | Auto6 |
| | | 179-206 | Auto7 |
| | | 207-234 | Auto8 |
| | | 235-255 | Auto0 |
| 51 | Auto Speed | 000-255 | Speed Slow to Fast<br>Only when Auto 0-8 is set on channel 50 |
| 52 | Dimmer | 000-255 | 0 - 100% |
| 53 | Strobe | 000-010 | No Function |
| | | 011-255 | Strobe Slow to Fast |
| 54 | Dim Mode | 000-051 | Menu setting dimmer mode |
| | | 052-101 | dimmer mode off linear dimmer |
| | | 102-152 | dimmer mode 1 (fastest) |
| | | 153-203 | dimmer mode 2 |
| | | 204-255 | dimmer mode 3 (slowest) |

## 11. Cleaning and Maintenance

Before starting any cleaning or maintenance activities:

**1.** Unplug the device's power cord from the outlet.

**2.** Let the device cool down.

**Cleaning**

- Clean the external optics with a soft cloth.
- Always be sure to dry all parts completely before plugging the unit back in.
- Cleaning frequency depends on the environment in which the unit operates (i.e. smoke, fog residue, dust, dew).
- Do not immerse the device in any liquid.

**Maintenance**

- All screws should be tightened and free of corrosion.

- The housing, the lenses, the mounting supports and the installation location (e.g. ceiling, suspension, trussing) should not be deformed, modified or tampered with; e.g. do not drill extra holes in mounting supports, do not change the location of the connections…
- Mechanically moving parts must not show any signs of wear and tear.
- The electric power supply cables must not show any damage. Have a qualified technician maintain the device.
- There are no user-serviceable parts, apart from the fuse.
- Refer to an authorized dealer for service and/or spare parts.

**Replacing the fuse**

Only replace the fuse by a fuse of the same type and rating.

1. Unplug the device's power cord from the outlet.
2. Use a flat-head screwdriver to remove the fuse holder.
3. Remove the damaged fuse and replace with the same type of fuse.
4. Insert the fuse holder back in its place and reconnect power.

**Factory Reset**

You can reset the device to its factory defaults as follows:

1. Unplug the device's power cord from the outlet.
2. Let the device cool down.
3. Simultaneously press and hold <MENU/ESC> and <ENTER> while connecting the device to the outlet.
4. Release <MENU/ESC> and <ENTER>.

## 12. Technical Specifications

| | |
|---|---|
| power supply | 100-240 VAC 50/60 Hz |
| power consumption | 175 W |
| IP rate | IP20 |
| LED source | 49 x 3 W warm white CREE LED |
| colour temperature | 2800 K |
| beam angle | 8° |
| pitch | 60 mm |
| DMX in- and output | 3-pin XLR, linkable |
| dimensions | 500 x 500 x 81 mm |
| weight | 7.5 kg |

**Use this device with original accessories only. Velleman nv cannot be held responsible in the event of damage or injury resulting from (incorrect) use of this device.**

**For more info concerning this product and the latest version of this manual, please visit our website www.luxibel.com.**

**The information in this manual is subject to change without prior notice.**

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## Velleman® Service and Quality Warranty

Since its foundation in 1972, Velleman® acquired extensive experience in the electronics world and currently distributes its products in over 85 countries.

All our products fulfil strict quality requirements and legal stipulations in the EU. In order to ensure the quality, our products regularly go through an extra quality check, both by an internal quality department and by specialized external organisations. If, all precautionary measures notwithstanding, problems should occur, please make appeal to our warranty (see guarantee conditions).

## General Warranty Conditions Concerning Consumer Products (for EU):

• All consumer products are subject to a 24-month warranty on production flaws and defective material as from the original date of purchase.

• Velleman® can decide to replace an article with an equivalent article, or to refund the retail value totally or partially when the complaint is valid and a free repair or replacement of the article is impossible, or if the expenses are out of proportion.

You will be delivered a replacing article or a refund at the value of 100% of the purchase price in case of a flaw occurred in the first year after the date of purchase and delivery, or a replacing article at 50% of the purchase price or a refund at the value of 50% of the retail value in case of a flaw occurred in the second year after the date of purchase and delivery.

### • Not covered by warranty:

- all direct or indirect damage caused after delivery to the article (e.g. by oxidation, shocks, falls, dust, dirt, humidity...), and by the article, as well as its contents (e.g. data loss), compensation for loss of profits;

- consumable goods, parts or accessories that are subject to an aging process during normal use, such as batteries (rechargeable, non-rechargeable, built-in or replaceable), lamps, rubber parts, drive belts... (unlimited list);

- flaws resulting from fire, water damage, lightning, accident, natural disaster, etc.…;

- flaws caused deliberately, negligently or resulting from improper handling, negligent maintenance, abusive use or use contrary to the manufacturer's instructions;

- damage caused by a commercial, professional or collective use of the article (the warranty validity will be reduced to six (6) months when the article is used professionally);

- damage resulting from an inappropriate packing and shipping of the article;

- all damage caused by modification, repair or alteration performed by a third party without written permission by Velleman®.

• Articles to be repaired must be delivered to your Velleman® dealer, solidly packed (preferably in the original packaging), and be completed with the original receipt of purchase and a clear flaw description.

• Hint: In order to save on cost and time, please reread the manual and check if the flaw is caused by obvious causes prior to presenting the article for repair. Note that returning a non-defective article can also involve handling costs.

• Repairs occurring after warranty expiration are subject to shipping costs.

• The above conditions are without prejudice to all commercial warranties.

**The above enumeration is subject to modification according to the article (see article's manual).**

**Made in PRC**
**Imported by Velleman nv**
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**www.velleman.eu**